

# INTERNATIONAL SEARCH REPORT

Internat Application No  
PCT/GB2004/001351

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 B01D24/02 B01D24/04 B01D24/30 B01D24/36 B01D24/38  
B01D24/40 B01D24/46

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B01D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X          | PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 04,<br>2 April 2003 (2003-04-02)<br>& JP 2002 361009 A (MAEZAWA IND INC),<br>17 December 2002 (2002-12-17)<br>abstract | 1,3,4,<br>10,12       |
| X          | DE 100 47 530 A (EGNER UMWELTTECH GMBH)<br>11 April 2002 (2002-04-11)<br>abstract; figure 1  | 1,3,4,10              |
| X          | RU 2 000 135 C (KOZLOVSKIY ALEKSANDR<br>STANISLAV) 7 September 1993 (1993-09-07)<br>figure 1   | 1,3,4                 |
| X          | US 4 197 201 A (HJELMNER ULF R ET AL)<br>8 April 1980 (1980-04-08)<br>abstract; figure 1   | 1,3,4,10              |
|            | - / - -  |                       |

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

6 July 2004

Date of mailing of the international search report

12.07.04

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Hoffmann, A

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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

| Category ° | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| X          | EP 0 590 705 A (ASTRACO BEHEER BV)<br>6 April 1994 (1994-04-06)<br>abstract; figure 1<br>-----  | 1, 3, 4, 10           |
| X          | EP 0 857 507 A (GRABOWSKI TROPFKOERPER<br>TECHNIK) 12 August 1998 (1998-08-12)<br>abstract; figure 1<br>-----   | 1                     |
| X          | EP 0 502 262 A (AGFA GEVAERT NV)<br>9 September 1992 (1992-09-09)<br>abstract; figure 1<br>-----  | 1                     |
| X          | US 165 377 A (T.R. SINCLAIRE)<br>July 1875 (1875-07)<br>column 4, paragraphs 2,3<br>-----   | 1                     |
| X          | US 4 240 911 A (DEMETER AKOS ET AL)<br>23 December 1980 (1980-12-23)<br>abstract; figure 1<br>-----   | 1                     |
| A          | US 4 719 010 A (SEIBEL HEINRICH)<br>12 January 1988 (1988-01-12)<br>abstract; figure 1<br>-----   | 10                    |
| A          | PATENT ABSTRACTS OF JAPAN<br>vol. 2003, no. 04,<br>2 April 2003 (2003-04-02)<br>& JP 2002 361005 A (MAEZAWA IND INC),<br>17 December 2002 (2002-12-17)<br>abstract<br>----- | 1                     |
| A          | DE 16 11 096 A (HARDING VICTOR JOHN<br>GEORGE) 24 September 1970 (1970-09-24)<br>page 9, paragraph 1; claim 8<br>-----  | 12                    |
| A          | US 4 976 934 A (MARINGER ROBERT E ET AL)<br>11 December 1990 (1990-12-11)<br>abstract<br>column 4, lines 40-55<br>-----   | 13                    |

# INTERNATIONAL SEARCH REPORT

Internal application No  
PCT/GB2004/001351

| Patent document<br>cited in search report | Publication<br>date | Patent family<br>member(s)   | Publication<br>date  |
|---|---------------------|--|--|
| JP 2002361009 A                           | 17-12-2002          | NONE   |  |
| DE 10047530 A                             | 11-04-2002          | DE 10047530 A1   | 11-04-2002   |
| RU 2000135 C                              | 07-09-1993          | RU 2000135 C1  | 07-09-1993   |
| US 4197201 A                              | 08-04-1980          | SE 396552 B<br>US 4126546 A<br>AT 371362 B<br>AT 129077 A<br>AU 509684 B2<br>AU 2263077 A<br>BE 852061 A1<br>CA 1083976 A1<br>CH 618100 A5<br>DE 2708340 A1<br>DK 90477 A ,B,<br>FI 770684 A ,B,<br>FR 2342769 A1<br>GB 1547497 A<br>IT 1073281 B<br>JP 1108743 C<br>JP 52111062 A<br>JP 56051808 B<br>MY 36581 A<br>NL 7702245 A ,B,<br>NO 770702 A ,B,<br>SE 7602999 A | 26-09-1977<br>21-11-1978<br>27-06-1983<br>15-11-1982<br>22-05-1980<br>31-08-1978<br>01-07-1977<br>19-08-1980<br>15-07-1980<br>08-09-1977<br>04-09-1977<br>04-09-1977<br>30-09-1977<br>20-06-1979<br>13-04-1985<br>13-08-1982<br>17-09-1977<br>08-12-1981<br>31-12-1981<br>06-09-1977<br>06-09-1977<br>04-09-1977 |
| EP 0590705 A                              | 06-04-1994          | NL 9201517 A<br>AT 137682 T<br>DE 69302552 D1<br>DE 69302552 T2<br>DK 590705 T3<br>EP 0590705 A1<br>ES 2087647 T3  | 16-03-1994<br>15-05-1996<br>13-06-1996<br>19-09-1996<br>17-06-1996<br>06-04-1994<br>16-07-1996   |
| EP 0857507 A                              | 12-08-1998          | DE 19704238 A1<br>AT 202294 T<br>CA 2225480 A1<br>DE 59703858 D1<br>EP 0857507 A1<br>ES 2157515 T3<br>JP 10216412 A<br>US 6077426 A  | 06-08-1998<br>15-07-2001<br>05-08-1998<br>26-07-2001<br>12-08-1998<br>16-08-2001<br>18-08-1998<br>20-06-2000   |
| EP 0502262 A                              | 09-09-1992          | EP 0502262 A1<br>DE 69102418 D1<br>DE 69102418 T2<br>DK 502262 T3<br>JP 5119441 A<br>US 5188732 A  | 09-09-1992<br>14-07-1994<br>27-10-1994<br>01-08-1994<br>18-05-1993<br>23-02-1993   |
| US 165377 A                               |                     | NONE   |  |
| US 4240911 A                              | 23-12-1980          | NONE   |  |
| US 4719010 A                              | 12-01-1988          | DE 3540267 A1  | 21-05-1987   |

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| Patent document<br>cited in search report |   | Publication<br>date | Patent family<br>member(s)   | Publication<br>date  |
|---|---|---------------------|--|--|
| US 4719010                                | A |                     | AT 55067 T<br>DE 3673124 D1<br>EP 0222180 A2<br>JP 62114663 A  | 15-08-1990<br>06-09-1990<br>20-05-1987<br>26-05-1987   |
| -----                                     |   |                     |  |  |
| JP 2002361005                             | A | 17-12-2002          | NONE   |  |
| -----                                     |   |                     |  |  |
| DE 1611096                                | A | 24-09-1970          | AU 410422 B2<br>AU 1611367 A<br>DE 1611096 A1<br>FR 1566223 A<br>GB 1190248 A                                  | 15-02-1971<br>22-05-1969<br>24-09-1970<br>09-05-1969<br>29-04-1970                             |
| -----                                     |   |                     |  |  |
| US 4976934                                | A | 11-12-1990          | AT 78418 T<br>CA 1312019 C<br>DE 3780631 D1<br>DE 3780631 T2<br>EP 0296223 A1<br>JP 1501850 T<br>WO 8804954 A1 | 15-08-1992<br>29-12-1992<br>27-08-1992<br>24-12-1992<br>28-12-1988<br>29-06-1989<br>14-07-1988 |
| -----                                     |   |                     |  |  |